

it is in the process of naturalization in India. Sanjappa (1992) had mentioned that it is naturalised in Karnataka, Gujarat, and Uttar Pradesh. Babu (1977) recorded it from Sahasradhara, Dehradun. However, it is the first report of its occurrence in inner Garhwal indicating its naturalization to this part of the Himalayas.

Dolichos tenuicaulis (Baker) Craib, Contr. Fl. Siam. Dicot. 66: 1912 in nota & Fl. Siam. Enum. 1: 460. 1928; Sanjappa, Leg. Ind. 167. 1992. (Fig. 5, A - C).

Flowering and fruiting: August-October.

Distribution: Towards Chelusain, Pauri Garhwal, 1600 m a. s. l.

Ecology: Rare. A few plant specimens were collected in dry localities, on slopes along dry streams, and associated with the *Berberis* sp.

Specimen examined: L.R.D., GUH-12,331.

Notes: Recently Sanjappa (1992) noted its occurrence from Sikkim, Meghalaya, Orissa, Nepal, Bhutan, Burma, and China. This species has not been collected earlier in this part of the Himalayas. Hence it is a new record for Garhwal as well as Kumaon Himalayas.

Dumasia villosa DC., Ann. Sci. Nat. Paris, ser. 1, 4: 96. 1825. var. *leiocarpa* (Benth.) Baker in Hook. f., FBI. 2: 183. 1876; Sanjappa, Leg. Ind. 168. 1992. (Fig. 6, A - C).

Flowering and fruiting: September-

December.

Distribution: Pinswar Road, Tehri Garhwal, 1800 m a.s.l.

Ecology: Rare. A few plants occur along the roadsides on walls, associated with *Eupatorium* sp., *Berberis* sp. and under the shade of trees.

Specimen examined: L.R.D., GUH-12,346.

Notes: Hooker (1876) and Sanjappa (1992) recorded its occurrence in Sikkim, Arunachal Pradesh, Nepal, Bhutan, Sri Lanka, Burma, Thailand and China. This taxon has not been collected earlier from this part of the Himalayas. This is a new record for Garhwal and Kumaon Himalayas.

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34. STOMATA ON SEED OF *BAUHINIA PURPUREA* L. (LEGUMINOSAE: CAESALPINIOIDEAE)

(With a text-figure)

Rugenstein and Lersten (1981, *Amer. J. Bot.* 68(6): 873-876) reported the presence of stomata on seeds of some species of *Bauhinia* based mainly on SEM observations. In *B. purpurea* L. they found that the stomata on mature seeds are deformed and partially obstructed by surrounding epidermal cells which retain guard cell appearance but during a SEM study following usual method on the testa surface pattern we found that some of the stomata on mature

seeds of *B. purpurea* may also be normal in appearance (Fig. 1). Both the types of stomata are, however, recessed and lack subsidiary cells.

Mature seeds were collected in the Indian Botanic Garden. Fruiting voucher from the plant (*Bandyopadhyay* 15206) has been deposited in CAL.

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Fig. 1. Scanning electron micrograph of a stoma on mature seed of *B. purpurea*, x 650. Note its normal appearance.

R.S.I.C. for the use of Scanning Electron Microscope (PSEM 500)

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35. SEM STUDIES ON THE TESTA SURFACE PATTERN OF SOME SPECIES OF *BAUHINIA* (LEGUMINOSAE: CAESALPINIOIDEAE)

(With a text-figure)

Kaur *et al.* (1992) studied the testa surface pattern of some species of *Bauhinia* based on SEM observations. Their studies, however, provided little detailed information and adequate attention was not paid to the correct names. Furthermore, in the course of a SEM study on the testa surface pattern of 4 species of *Bauhinia* it was observed that our findings either did not fully agree with theirs or even differed entirely though we, too, had studied the same part of the seed (Datt, pers. comm. 1994). Thus in the present paper we have described, in detail, the testa surface pattern of 4 species, namely *Bauhinia acuminata* L., *B. malabarica* Roxb., *B. purpurea* L. and *B. semla* Wund.

MATERIALS AND METHOD

Mature seed samples were obtained from herbarium specimens deposited in CAL. For SEM the seeds were cleaned with cotton soaked in absolute ethanol, air dried, mounted on metallic stubs with silver paint after correctly orientating them (see Gunn 1991:16) and then gold coated in an Edward sputter-coater. Observations were made with PSEM 500 and

the scanning electron micrographs were taken from the central part of the seeds.

Specimens examined: *B. acuminata*: Sur 15201; *B. malabarica*: Jain 4082; *B. purpurea*: Bandyopadhyay 15206; *B. semla*: Tarafder 18314.

OBSERVATIONS AND DISCUSSION

B. acuminata (Fig. 1a): The testa surface is pitted. The pits are sparsely or closely situated and vary in size. They are circular, angular or elongated.

Kaur *et al.* (1992) described the testa surface as pitted and reported of some deposition which seems to be scattered on the testa surface (see Fig. 2B in Kaur *et al.* (1992).

B. malabarica (Fig. 1b): The testa surface is regulate with scattered pits.

Kaur *et al.* (1992) described the testa surface as smooth with distinct cracks (Fig. 2A) but this could not be corroborated.

B. purpurea (Fig. 1 c-d): The testa surface is reticulate. The reticula vary in size and are angular or more or less polygonal.

B. triandra Roxb. studied by Kaur *et al.* (1992)